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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,983	12/10/2003	Takahiro Esaki	2003_1797A	5112

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EXAMINER	
HUFFMAN, JULIAN D	

ART UNIT	PAPER NUMBER
2853	

DATE MAILED: 09/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/730,983	ESAKI ET AL.	
	Examiner	Art Unit	
	Julian D. Huffman	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 8* is/are rejected.

7)☒ Claim(s) *7* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 December 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12/10/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first line head offset with respect to the second line head with a third line head offset with respect to the second line head, but not offset with respect to the first line head must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Recording Apparatus With Offset Line Heads.

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

Claim 4 specifies "the third line head placed being offset with respect to the second line heads in the Y direction, but not being offset with respect to the first line head in the Y direction". The specification does not provide support for this claim language.

Claim Objections

4. Claims 1-7 are objected to because of the following informalities:

In claims 1, 3 and 4, the word "injecting" should be changed to "discharging".

In claim 4, line 4, it is respectfully suggested that the word "is" be inserted after the word "head" and in line 5 it is respectfully suggested that the word "heads" be changed to "head".

Claims 6 and 7 are unclear. These claims specify how an offset size is set, but do not specify which offset the language refers to (eg. line head 1 relative to line head 2 or line head 3 relative to line head 1 or line head 3 relative to line head 2).

Claims 6 and 7 lack antecedent basis for the term "said individual heads".

In claims 5-7, there is insufficient antecedent basis for the term "the number of colors"

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2, 4 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Suzuki et al. (U.S. 6,254,218 B1).

Suzuki et al. discloses :

With regards to claim 1, a recording apparatus, comprising:

a first line head for injecting ink of a first color (26Y, yellow);

a second line head for injecting ink of a second color (26K-2, black); and

relative movement means for moving a recording medium relative to said first and second line heads (fig. 4, element 16e),

wherein said first line head is placed by being offset with respect to said second line head in a Y direction perpendicular to an X direction which is a relative transportation direction of said recording medium (fig. 1, first line head 26Y is offset from second line head 26K-2 by ½ nozzle pitch, column 9, lines 15-35, this passage is

inconsistent with fig. 1, and states that the head 26k-1 is offset relative to the other heads, while fig. 1 shows the head 26k-2 offset relative to the other heads, however, regardless of which head is offset, the arrangement satisfies the claim limitations).

With regards to claim 2, the recording apparatus according to claim 1, wherein each of said first and second line heads is formed by providing, in the Y direction, a plurality of individual heads (27), each of which is provided with a plurality of discharge ports (27a).

With regards to claim 4, the recording apparatus according to claim 1, further comprising a third line head (26M) for injecting ink of a third color (magenta), wherein the third line head placed by being offset with respect to the second line heads in the Y direction, but not being offset with respect to the first line head in the Y direction (26M is offset relative to 26K-2, but not relative to 26Y).

With regards to claim 8, a recording apparatus, comprising:

a plurality of line heads from which inks of first through N-th (N≥3) colors are discharged (there are 4 line heads which eject ink of 4 different colors), respectively; and

relative movement means for moving a recording medium relative to said line heads (fig. 4, element 16e), wherein at least a part of said line heads are placed by being offset in a Y direction perpendicular to an X direction which is a relative transportation direction of said recording medium (the 26K-2 head is offset relative to the other color heads).

7. Claims 1-3, 5, 6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsumoto et al. (US 2002/008731 A1).

Matsumoto et al. discloses :

With regards to claim 1, a recording apparatus, comprising:

a first line head for injecting ink of a first color (fig. 9, short heads 22 which eject cyan ink together form a line head since they are generally arranged across the print media and capable of printing a line of print data);

a second line head for injecting ink of a second color (second set of short heads which eject magenta ink form a line head since they are generally arranged across the print media and capable of printing a line of print data); and

relative movement means for moving a recording medium relative to said first and second line heads (0004), wherein said first line head is placed by being offset with respect to said second line head in a Y direction perpendicular to an X direction which is a relative transportation direction of said recording medium (0084).

With regards to claim 2, the recording apparatus according to claim 1, wherein each of said first and second line heads is formed by providing, in the Y direction, a plurality of individual heads (22), each of which is provided with a plurality of discharge ports (20).

With regards to claim 3, the recording apparatus according to claim 1, further comprising a third line head (yellow) for injecting ink of a third color, wherein the third

line head is placed by being offset with respect to both the first and second line heads in the Y direction (0084).

With regards to claims 5 and 6, the recording apparatus according to claims 2 or 3, wherein an offset size is set to be almost equal to a value found by dividing a print width of said individual heads by the number of colors (The language print width of the individual heads may be interpreted as the print width of an individual head since each head has the same width, or the print width of a plurality of individual heads added together, while the number of colors may refer to the number of colors ejected by the first and second printheads, or the total number of colors printed by the recording apparatus. The language "an offset" may refer to an offset of any one of the three printheads relative to another. The print width of an individual head of Matsumoto et al. divided by the total number of colors, which is 3, provides an offset of 1/3 of the width of an individual head. As seen in fig. 9, the C printhead is offset relative to the M printhead by almost 1/3 of the width of an individual short head. Alternatively, the C printhead and the Y printhead are offset by an even greater amount, which is slightly greater than 1/3 of the width of an individual short head, which is also equivalent to almost 1/3 of the width of an individual short head. Further, the number of colors in the recording apparatus is not limited, see section 0095, and the numerical color denominator in the claimed equation may, in Matsumoto, be any integral value greater than or less than 3, which provides for a vast number of offset values, any of which may provide an offset which is almost equal to the offset between two line heads depicted in fig. 9).

With regards to claim 8, a recording apparatus, comprising:

a plurality of line heads (fig. 9, C, M, Y) from which inks of first through N-th (N≥3) colors are discharged, respectively (cyan, magenta, yellow); and

relative movement means for moving a recording medium relative to said line heads (0004), wherein at least a part of said line heads are placed by being offset in a Y direction perpendicular to an X direction which is a relative transportation direction of said recording medium (0084).

Allowable Subject Matter

8. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten to overcome any objections outlined above and in independent form including all of the limitations of the base claim and any intervening claims.

The primary reason for the indication of allowability of claim 7 is the inclusion of the limitations of a recording apparatus including a first line head offset with respect to a second line head in a Y direction perpendicular to an X direction which is a relative transportation direction of said recording medium, and a third line head offset in the Y direction with respect to the second line head, but not the first line head, wherein an offset size is set to be almost equal to a value found by dividing a print width of individual heads which form each line head by the number of colors. It is these limitations found in the claim, as they are claimed in the combination of, which have not been found, taught or suggested by the prior art of record which makes this claim allowable over the prior art.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian D. Huffman whose telephone number is (571) 272-2147. The examiner can normally be reached on 9:30a.m.-6:00p.m. Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Julian D. Huffman
30 August 2005